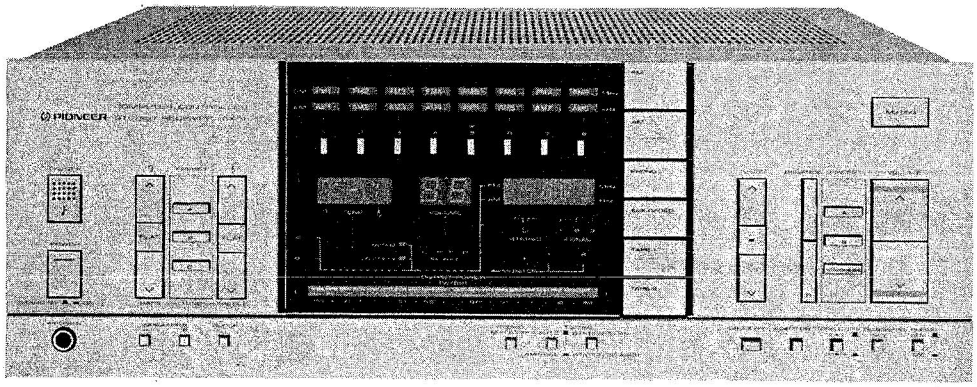
Operating Instructions

COMPUTER CONTROLLED STEREO RECEIVER

SX-9

S/G



IMPORTANT NOTICE

SX-9 is designed to operate from 110V, 120V, 220V or 240V main. Before turning on the power, please confirm the line voltage setting indicated on the rear of your unit corresponds to the supply voltage in your area; if not, change the setting as described in LINE VOLTAGE SETTING on page 2.

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LINE VOLTAGE SETTING

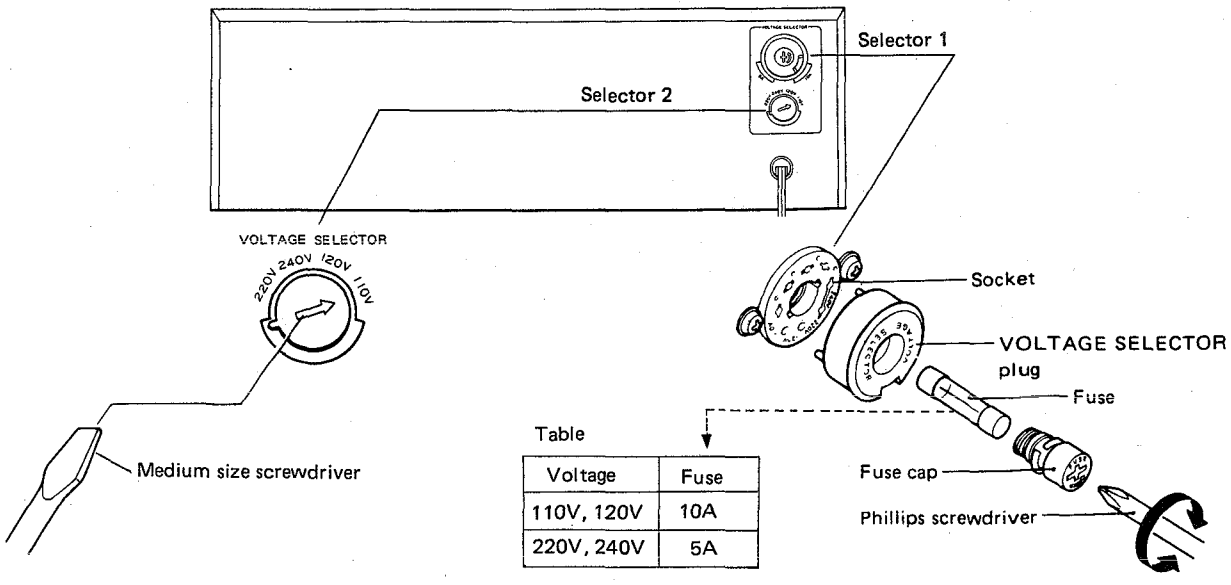
You will find the two VOLTAGE SELECTOR switches on the rear panel. These switches have positions for 110V, 120V, 220V and 240V power sources. Before your receiver is shipped from the factory, these switches are set to the power requirements of the destination; nevertheless, you should check that they are set properly before plugging the power cord into the outlet. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust these selector switches. Before adjusting, disconnect the power cord.

Selector 1

1. Unscrew the fuse cap with a Phillips screwdriver, then take out the fuse cap and plug.
2. Re-install the plug with its cutaway section exposing the correct voltage indication as shown in the illustration below.
3. Refer to the table and install a replacement fuse (provided as an accessory).
4. Insert the fuse in the fuse cap, then fit the cap to the plug and tighten.

Selector 2

1. Prepare a medium size screwdriver.
2. Insert the screwdriver into the arrow on the voltage selector and adjust so that the tip of the arrow points to the voltage value of your area.

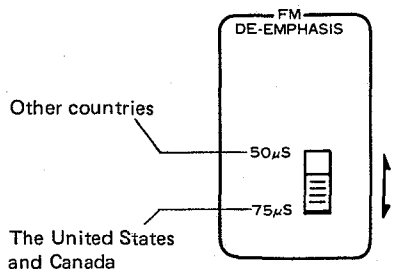


Table

Voltage	Fuse
110V, 120V	10A
220V, 240V	5A

SETTING OF THE FM DE-EMPHASIS SWITCH (on the rear panel)

This switch is used to select the de-emphasis value.
Before the unit leaves the manufacturing plant, it is set to the de-emphasis of the destination.
For the United States and Canada, it is set to 75μS, and for other countries to 50μS.
Check that the switch is set properly before use.
If the switch is set to the wrong position, the high-frequency range sound will appear distorted during the reception of an FM broadcast. Contact your dealer and inquire if you are not sure about the de-emphasis value.



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BEFORE USE

SETTING OF THE AM CHANNEL STEP SWITCH (on the rear panel)

Before the receiver leaves the manufacturing plant, this switch is set to the channel allotment plan of the receiver's destination. For North and South America, it is set to 10kHz, and for other countries to 9kHz. Check that the switch is set properly before use. If the switch is set to the wrong position, figures on the frequency display will not stop with AM tuning.

NOTE:
Contact your dealer and inquire if you are not sure about the channel allotment plan.

ADJUSTING THE CLOCK'S TIME

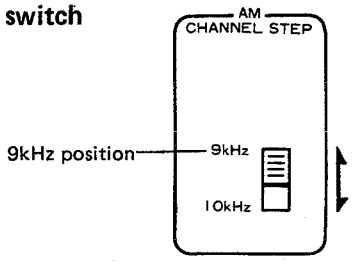
The unit has a built-in digital clock. This clocks will continue to function as long as the unit's power cord is plugged into the wall socket and it will display the time on the unit's display even when the receiver is not being used. Even during performances, the time can be indicated by depressing the CLOCK switch.

Adjust the clock's time as follows:

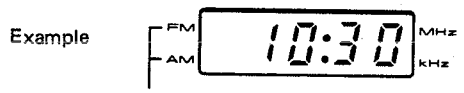
1. Plug the power cord into the wall socket.
2. Depress the POWER switch.
3. Find out what the present time is from your own watch, etc.
4. Depress the " ∧ " part of the TUNING controls keeping the CLOCK switch pushed. When this part is kept depressed, the numbers on the display change rapidly and the time advances.
5. Release the TUNING controls when the adjustment time approaches.
6. The display now advances 1 minute every time the " ∧ " part of the TUNING controls are depressed. The clock starts to function once the TUNING controls is released.

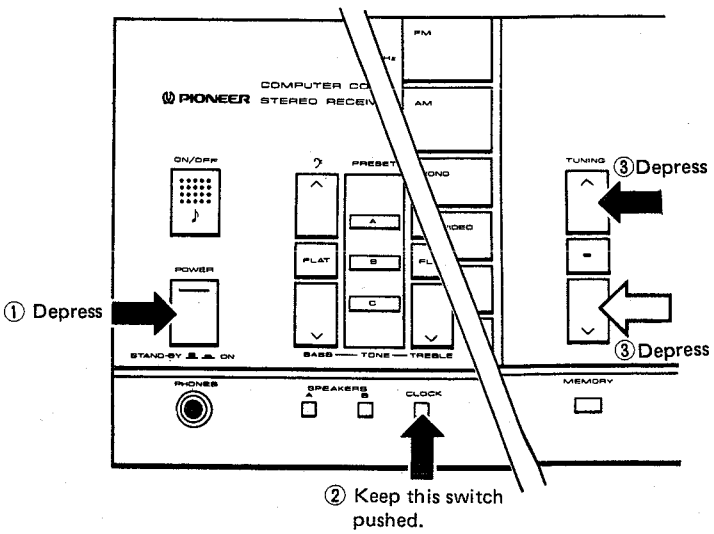
NOTE:
If the time has advanced too far, depress the " ∨ " part of the TUNING controls and the numbers on the time display will be reduced.

Setting the AM channel switch



Adjusting the clock's time





7. Look at the watch, etc. and release the CLOCK switch when the time approaches 00 sec.
(The clock now starts to show the time from 00 sec.)

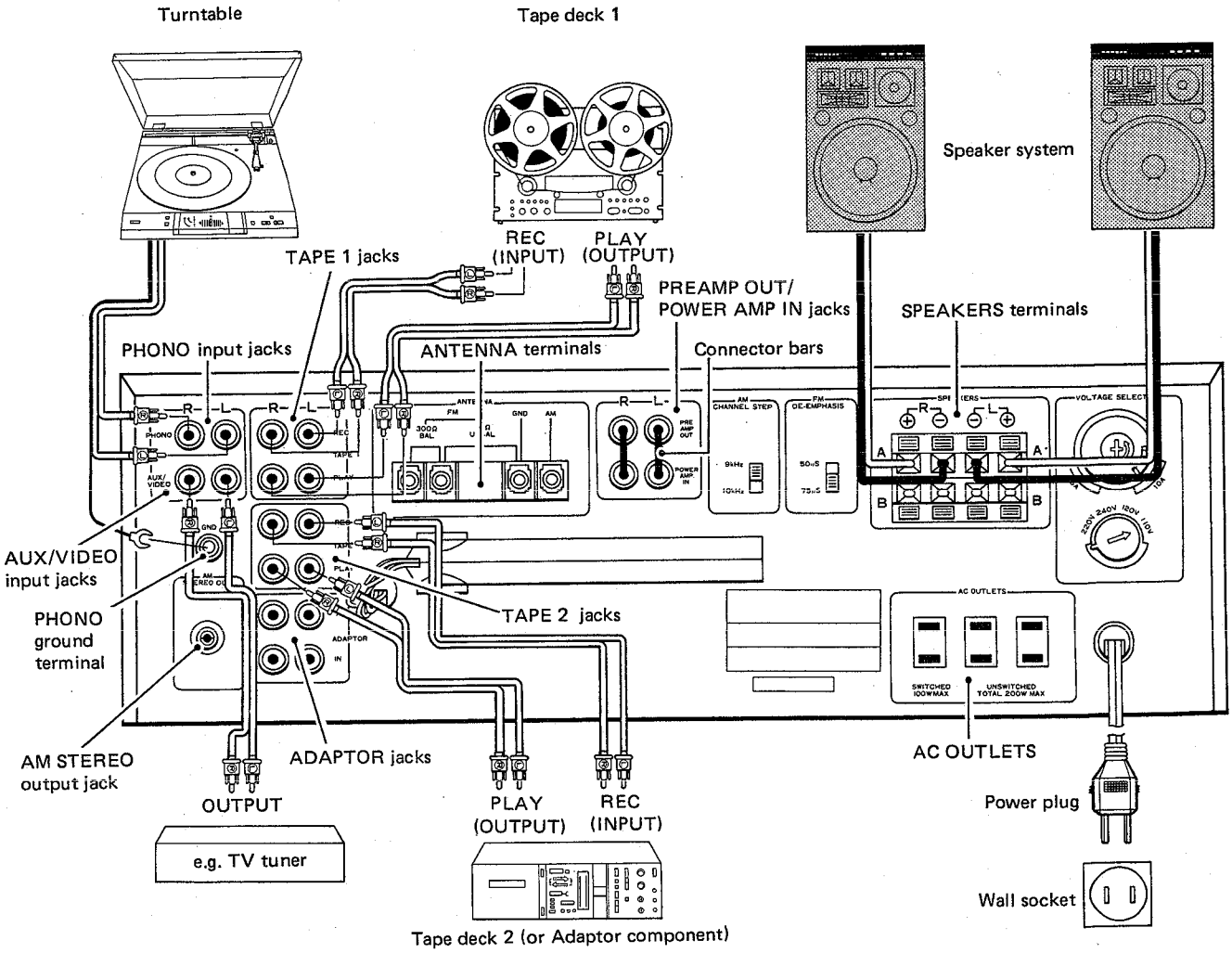
NOTES:
- *The built-in clock shows the time on a 12-hour basis.*
- *The clock stops when the power cord is disconnected or when the unit's power is switched off using a timer. In a case like this, proceed to adjust the clock following the same procedure as that outlined above.*

CONNECTIONS

PRECAUTIONS

- Depress the POWER switch only when you have completed all the connections of the stereo system. Always release POWER switch (STAND-BY ⏻) if you want to change the connections.
- The "L" and "R" on the receiver's input and output jacks stand for left channel and right channel respectively.
- Use the accessory connecting cords which come with each of the components (tape deck, tuner, etc.) for the connections.
- Make sure that the connections are secure. Improper connections can generate noise or cause the sound to be cut off.

REAR PANEL VIEW



USING THE AC OUTLETS

AC OUTLETS

These are spare power outlets.
Insert the power plug on the stereo component into these outlets.

SWITCHED (TOTAL 100 W MAX)

The power supplied through this outlet is coupled to the operation of the receiver's power switch. The maximum power capacity of the components which may be connected to this outlet is 100 W.

UNSWITCHED (200 W MAX)

The power is always supplied through these outlets regardless of the position of the receiver's power switch. The maximum power capacity of the component which may be connected to these outlets is 200 W.

NOTE:
Never connect the power plug of the electric appliance whose power consumption exceeds the power capacity of the AC OUTLETS indication.

AM STEREO OUTPUT JACK

This jack is for AM stereo broadcasts. When listening to the AM stereo broadcasts, connect the adaptor component to this jack. For further details, refer to the operating instructions of the AM stereo adaptor components.

AM CHANNEL STEP SWITCH

This switch is normally set to the 9kHz position.

TURNTABLE CONNECTION

Connect the output cords of a turntable to the PHONO input jacks. Be sure to connect left (L) channel and right (R) channel correctly. Connect the ground lead of the turntable to the GND terminal on the receiver.

AUX/VIDEO JACK CONNECTIONS

These jacks can be connected to the OUTPUT jacks on a TV tuner, Laser disc player, cartridge tape player or tape deck, etc.

TAPE DECK CONNECTIONS

The receiver is provided with two sets of recording output jacks and two sets of playback input jacks. Connect each of the jacks in the following way using the connecting cords which come with the tape deck.

Connections for recording

Connect the recording input jacks REC (INPUT) on the tape deck to the TAPE 1 REC jacks on the receiver.

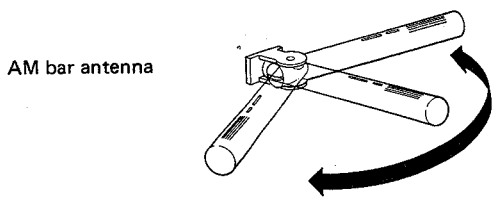
Connections for playback

Connect the playback output jacks PLAY (OUTPUT) on the tape deck to the TAPE 1 PLAY jacks on the receiver.

NOTE:
Connect your second tape deck or other adaptor component to the TAPE 2/ADPT (Adaptor) jacks.

AM BAR ANTENNA

As shown in the figure below, move the bar antenna and find the location which yields optimum reception.



PREAMPLIFIER/POWER AMPLIFIER CONNECTOR BARS

When the connector bars are disconnected from the jacks, you can separate the receiver's preamplifier and power amplifier. For normal use, however, they are connected. For further details on how to use these bars, refer to page 18.

NOTE:
If these bars are not connected properly, you will not hear any sound from the speakers connected to the SPEAKERS terminals.

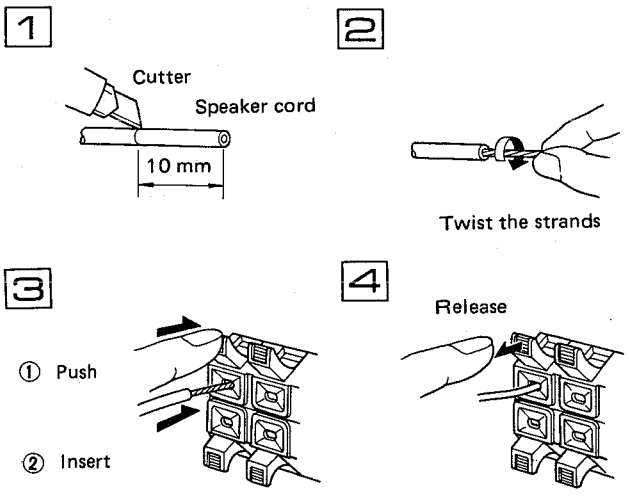
SPEAKER SYSTEM CONNECTIONS

The receiver is provided with two sets of SPEAKERS output terminals. Use the A set when connecting only one set of speakers. Viewed from the front, the R (right channel) SPEAKERS terminals are on the right and the L (left channel) SPEAKERS terminals are on the left. Connect the left channel speaker to the L terminals and the right channel speaker to the R terminals.
Use the B set when connecting second set of speakers.

Processing and connecting the speaker cords

1. Cut off the covering of the speaker cords are shown in figure.
2. If the strands at the tip of the cord are pointing in all directions, twist them with your thumb and forefinger. Otherwise some of the strands may come into contact with other terminals and cords, and cause a short.
3. Push the minus (black) lever of the speaker terminals with your finger and insert the minus speaker lead into the hole.
   The lead is locked into position when the lever is released. Check that the lead is connected firmly.
4. In the same way, connect the plus speaker lead (red) to the plus terminal (red).
5. Check that the core wires of the speaker cords are not projecting from the terminals. If they should project and come into contact, this will give rise to a short-circuit.

Speaker lead wire preparation and connection



Cautions when connecting the speakers

1. Make sure that the polarities of the SPEAKERS terminals and the input jacks on the speaker system are aligned: plus to plus and minus to minus.
2. Use speakers with a nominal impedance ranging from 6 ohms to 16 ohms.
3. Never use the speakers with the speaker output terminals shorted (minus and plus jacks connected) since this may damage the power transistors in the receiver.

ANTENNA AND GROUND CONNECTIONS

FM T-TYPE ANTENNA

The accessory T-type antenna serves for FM reception until you erect an outdoor antenna. Connect it to the FM 300Ω BAL terminals. Then tune in an FM station (refer to the section on LISTENING TO BROADCASTING [page 12]), spread both ends of the antenna as shown in the figure and find the position that yields optimum reception. Once this has been located, stretch the ends taut and fix them to the ceiling or wall.

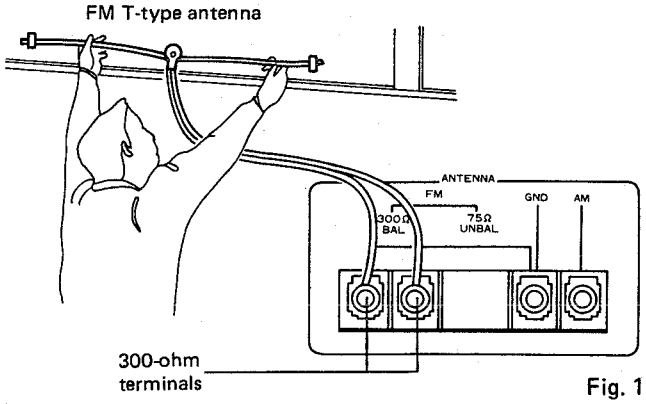


Fig. 1

OUTDOOR ANTENNA

If the reception is poor even with the accessory T-type antenna, the signals reaching the area where you live are too strong or weak, install an outdoor antenna.

FM ANTENNA CONNECTIONS

Connections using a 75-ohm coaxial cable

Refer to Fig. 2 and follow the procedure. Prepare the tip of the coaxial cable and connect it to the antenna input terminals (75Ω-UNBAL). For further details on the connections and operation, refer to the relevant sections in the ANTENNA's Operating Instructions.

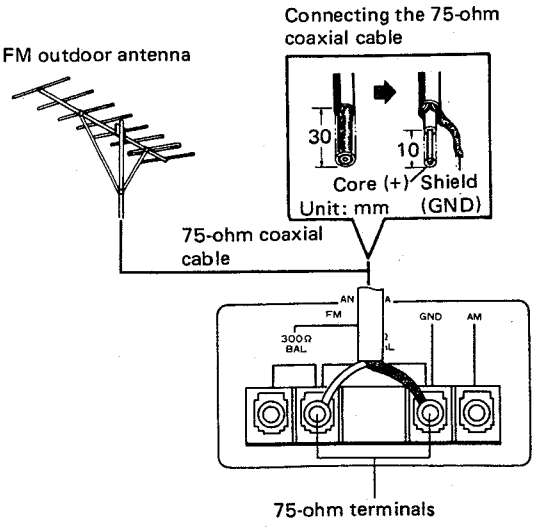


Fig. 2

Connections using a 300-ohm twinlead feeder

Refer to Fig. 3 and follow the procedure. Prepare the ends of the twinlead feeder and attach them to the 300Ω-BAL antenna input terminals. Then make the twinlead feeder as short as possible but do not bundle the wires or run them loose on the floor.

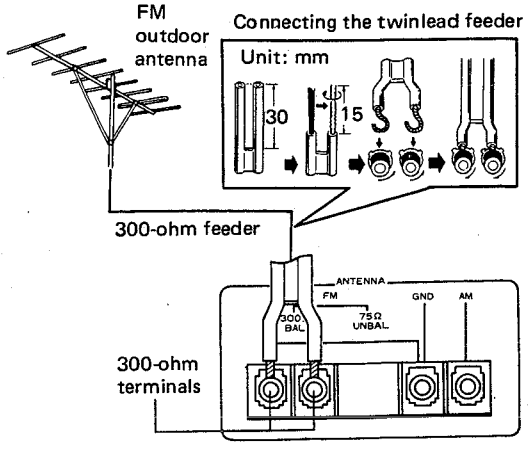


Fig. 3

AM ANTENNA

This receiver is provided with a ferrite bar antenna on the rear panel. If reception is not satisfactory when AM programs are received, change the position of the bar antenna. To achieve optimum reception, connect an AM antenna (vinyl-insulated wire – 5 to 6m) to the AM terminal. (Fig. 4).

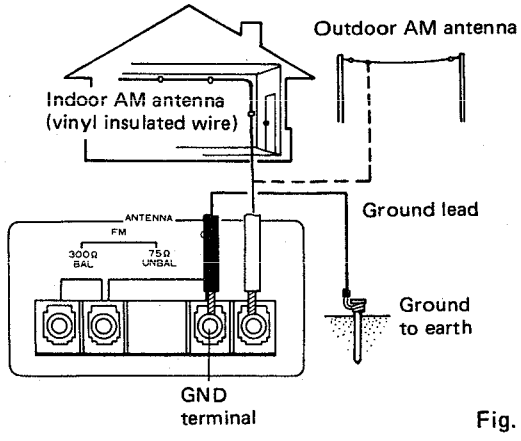


Fig. 4

FM ANTENNA INSTALLATION GROUNDING

It is recommended that the unit be grounded if FM reception is accompanied by a great deal of noise or interference. To ground, connect a thick vinyl-covered wire to the GND terminal at one end; at the other end, wind the wire around a metal water pipe, grounding rod or copper plate and bury it in the ground.

CAUTION:
Never connect the grounding wire to a gas pipe since there may be an explosion if gas leaks.

WHEN USING ADAPTOR COMPONENTS

The ADAPTOR jacks are available in addition to the normal tape REC and PLAY jacks to enable other sophisticated adaptor units (graphic equalizer, reverberation amplifier, etc.) to be connected without disturbing the full tape monitoring and duplicating facility. When using an adaptor, the program source can be taken from the AM, FM switch, INPUT selector or the TAPE 1 PLAY jacks. Fig. 5 illustrates a graphic equalizer connected to the ADAPTOR jacks.

GRAPHIC EQUALIZER (SG-9)

The sound that is reproduced from audio equipment is subtly affected by the structure and acoustics of the listening room. This graphic equalizer allows the sound to be compensated for an enhanced overall acoustic effect. It also allows you to create your own individual sound.

CONNECTIONS

Connect this graphic equalizer as shown in the Fig. 5. (For further details on the connections and operation, refer to the relevant sections in the SG-9's Operating Instructions.)

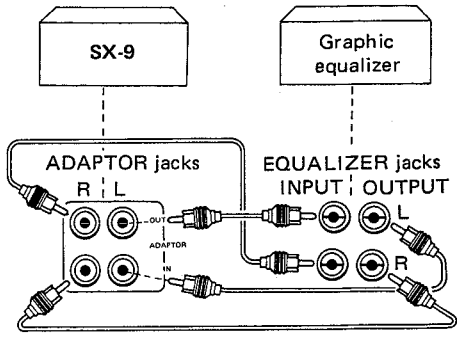


Fig. 5

To use the equalizer on a record playback etc.

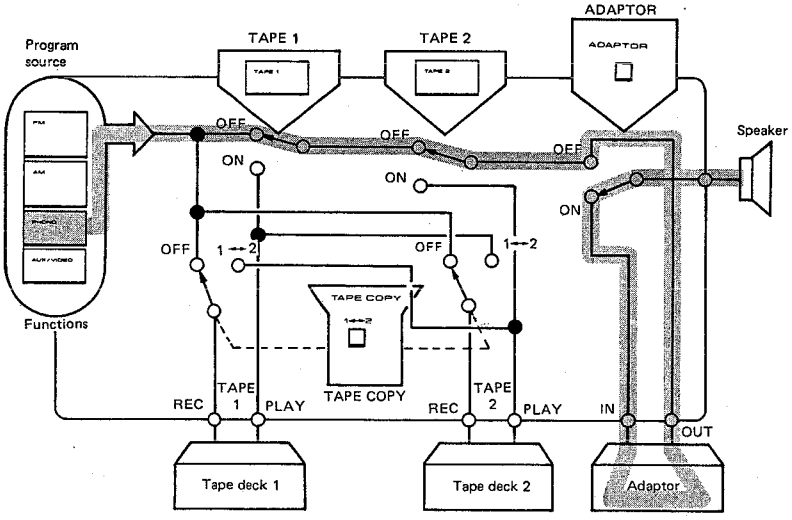


Fig. 6

To use the equalizer on a tapedeck playback.

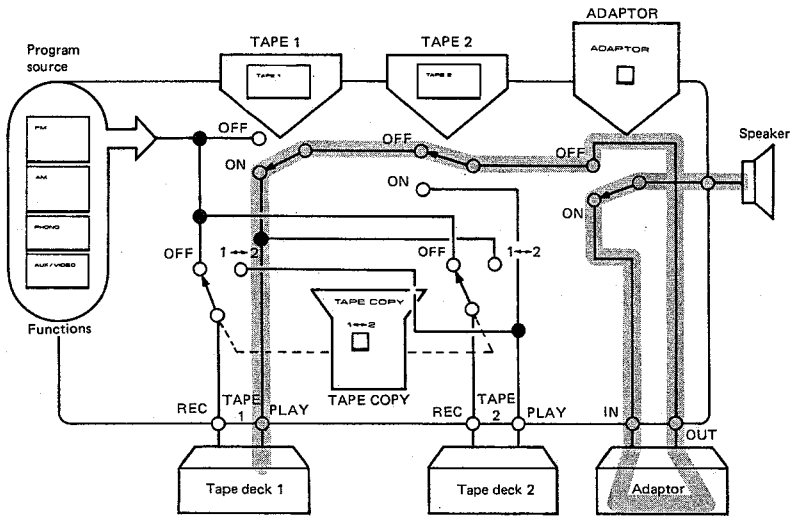
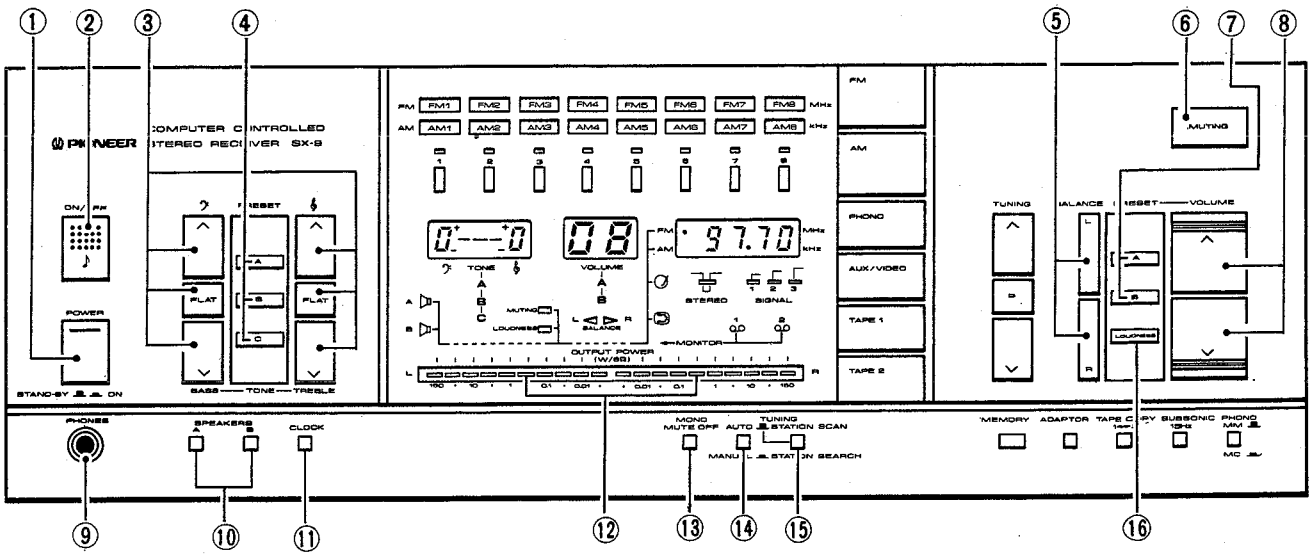


Fig. 7

FRONT PANEL FACILITIES



① POWER SWITCH (STAND-BY ▟ , ON ▬)

When this switch is depressed to the ON position, power is supplied to all the circuits. When released to the STAND-BY position, the power to the main circuits is cut off but still supplied to the clock. The clock continues to function until the power cord is disconnected.

NOTES:

- *Immediately after the power switch has been depressed to ON, the protection circuit is activated and no sound is heard through the speakers. The VOLUME STEP display blinks at the volume level heard before as a warning. When the numbers of the two digits blink, the output can be expected to be high. In this case, depress the VOLUME control " ∨ " and reduce the numerical display.*
- *Even when the power cord has been disconnected, the STATION CALL switch, PRESET-VOLUME and PRESET-TONE presetting information in the memory is preserved for about one week.*
  When the presetting information has been erased from the memory, follow the relevant instructions and proceed with presetting again.

② SOUND INDICATOR

Almost all the switches on the SX-9's front panel make an electronic beep sound when pressed, thanks to a function built into the unit. When this switch is depressed, the beep is heard when the control switches are pressed; when it is depressed again, the sound is no longer heard.

③ TREBLE, BASS TONE CONTROLS

These controls are used to adjust the treble and bass level to your preference. To enhance the treble and bass response, depress the " ∧ " control; to attenuate the response, depress " ∨ ". The increase or reduction in the response can be monitored on the ㉖ TONE CONTROL STEP display 𝄢 and 𝄞 . The response itself can be varied in 7 steps in either the "+" or "—" direction. When the center FLAT control is depressed, the treble frequency response is made flat.

④ PRESET-TONE SWITCHES

Switches A, B and C can memorize the bass and treble frequency responses which you have set to your preference, along with the ㊳ MEMORY switch, in three patterns (A, B and C). The bass and treble levels are set using the ③ TREBLE, BASS TONE controls while observing the ㉖ TONE CONTROL STEP display 𝄢 and 𝄞 . When the ㊳ MEMORY switch is depressed, the PRESET-TONE indicator starts to blink. When PRESET-TONE switch A, B or C is depressed, the set frequency response pattern is memorized in the switch. After having completed the memory operation, all you have to do to recall the frequency response which you have set is depress switch A, B or C.

⑤ BALANCE CONTROLS

These controls are used to adjust the balance in the volume of sound heard through the left and right speakers. When the sound tends to be louder at the left speaker, depress the R control; when it tends to be louder at the right speaker, depress the L control. When no sound is being delivered through the speakers, the balance can be checked by the ㉛ BALANCE indicators (L ◅ or ▻ R). Normally, both controls are depressed simultaneously and set to the center position (L ◅ and ▻ R light).

⑥ MUTING SWITCH

Depress this switch to attenuate the audio output indicated on the ㉜ VOLUME STEP display by 25dB. There is no need to adjust the VOLUME level when turning down the audio output temporarily and when changing over records or tapes.

⑦ PRESET-VOLUME SWITCHES

Switches A and B can memorize the volume level which you have set to your preference, along with the ㊳ MEMORY switch, at two levels. The volume level is set using the ⑧ VOLUME controls while observing the ㉜ VOLUME STEP display. When the ㊳ MEMORY switch is depressed, the PRESET-VOLUME indicator starts to blink. When PRESET-VOLUME switch A or B is depressed, the set volume level is memorized in the switch. The PRESET-VOLUME indicator changes blinking to lighting. After having completed the memory operation, all you have to do to recall the volume level which you have set is depress switch A or B.

⑧ VOLUME CONTROLS

Use these controls to adjust the output level to the speakers and headphones. Depress the ∧ switch to increase the output level. Depress the ∨ switch to decrease the output level.

NOTE:
By adjusting the VOLUME controls in combination with the MUTING switch, it is possible to adjust the volume more finely across a very wide range.

⑨ PHONES JACK

Plug the headphones plug into this jack when you want to listen through your stereo headphones.
Release both SPEAKERS switches if you want to listen to the sound through your headphones only.

⑩ SPEAKERS SWITCHES

Depress the switch corresponding to the speakers connected to the SPEAKERS terminals (A and B) on the rear panel. "A" refers to the speakers which have been connected to the A SPEAKERS terminals while "B" refers to the speakers which have been connected to the B SPEAKERS terminals.

NOTE:
No sound will be heard through the speakers when both A and B switches are depressed if only one set of speakers has been connected to either A or B SPEAKERS terminals.

⑪ CLOCK SWITCH

The time appears on the ⑲ FREQUENCY/CLOCK display when this switch is depressed. The display changes when the AM or FM switch is depressed. To adjust the present time, keep this switch in the depressed position and adjust using the ㉓ TUNING controls (∧ or ∨).

⑫ OUTPUT POWER METER

This meter allows you to read out the rated power level on the bar display when speakers with a nominal impedance of 8 ohms are connected to the SPEAKERS terminals.

⑬ MONO MUTE OFF SWITCH

The sound is heard in mono when this switch is set to the depressed position. Normally, the switch is kept at the released position. During FM or AM reception, the noise is reduced and reception is made clear. When the station is distant and its signals are weak, depress the switch and tune in the station manually.

⑭ AUTO/MANUAL SELECTOR

This is used to select the reception mode.

AUTO (released position): Auto tuning is selected in accordance with the position selected by the STATION SCAN/STATION SEARCH selector on the right.

MANUAL (depressed position):
Depress the TUNING controls and tune in the station manually. Each time the TUNING controls are depressed, the frequency changes in 50kHz steps during FM reception and in 9kHz or 10kHz steps during AM reception in accordance with the position of the AM CHANNEL STEP switch. When the TUNING controls are kept depressed, the frequency is continuously scanned. Tuning stops when the upper or lower limit of the frequency band is reached.

⑮ STATION SCAN/STATION SEARCH SELECTOR

This is used to select the auto tuning mode when the AUTO/MANUAL selector on the left is at AUTO.

STATION SCAN (released position): When the TUNING controls are depressed, the broadcasting stations start to be scanned and this procedure stops once a station has been picked up, and the program of that station is heard for about 5 seconds. After 5 seconds, the tuning operation then resumes and sound is heard in the same way. Each of the station is thus picked up in turn.
When the (㉓ Frequency stop " ■ " switch is depressed once you hear the sound of the desired program, the tuning operation stops and the unit is set to the reception mode.

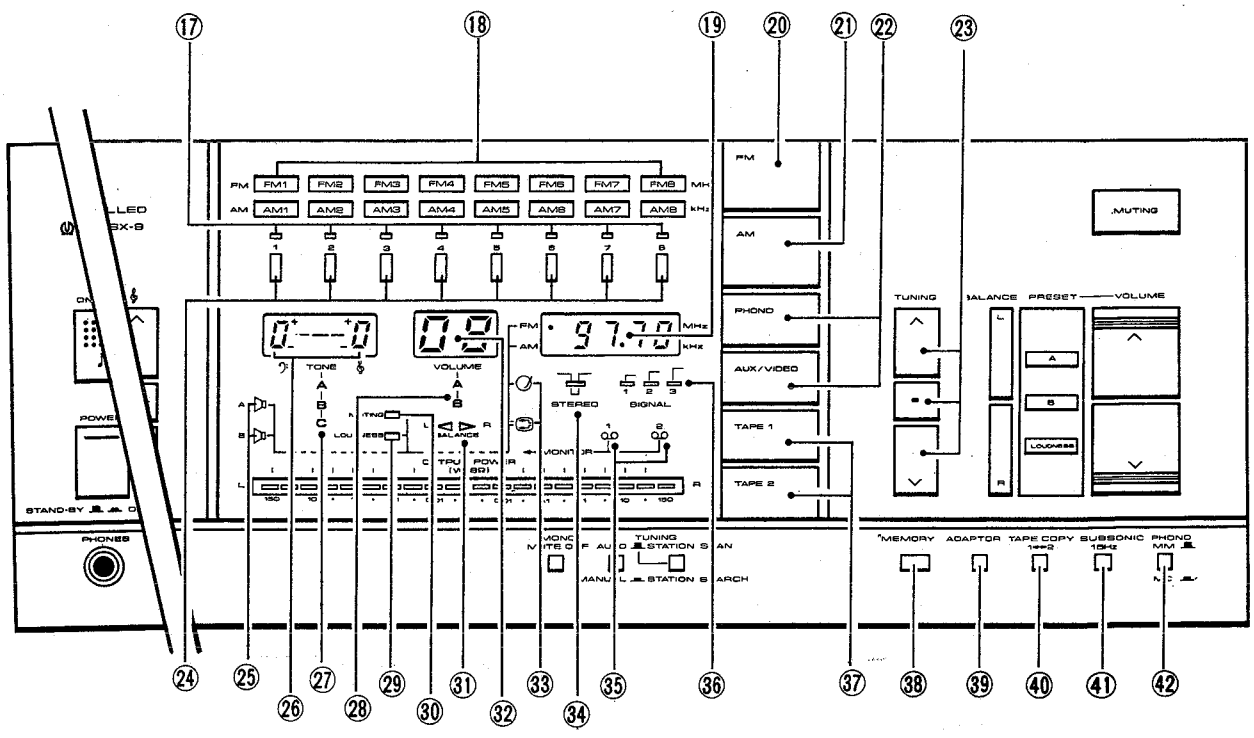
STATION SEARCH (depressed position): When the TUNING controls are depressed, the broadcasting stations start to be scanned, but this operation stops once a station has been picked up and the unit is set to the reception mode. Depress the TUNING controls again if the station picked up is not the desired one. The tuning operation now starts over again.

⑯ LOUDNESS SWITCH

When listening to a performance with the VOLUME level is low, depress this switch and the bass and treble will be accentuated.
When the volume is low, the human ear finds it harder to hear the bass and treble than when the volume is high. The LOUDNESS switch is thus designed to compensate for this deficiency.

(Continued to next page)

FRONT PANEL FACILITIES



⑰ STATION INDICATORS

The indicator that corresponds to the STATION CALL switch which has been depressed lights.

NOTE:
When presetting a station, all eight indicators light in sequence for about 5 seconds.

⑱ STATION DISPLAY WINDOWS

Insert the frequency cards of the broadcasting stations which have been preset into the STATION CALL switches.

⑲ FREQUENCY/CLOCK DISPLAY

This indicates the broadcasting frequency when a station has been tuned in. When the clock switch is depressed, it indicates the present time.

NOTE:
When the power is switched off, the present time is displayed.

⑳ FM SWITCH

Depress this switch for FM reception.

㉑ AM SWITCH

Depress this switch for AM reception.

㉒ INPUT SELECTOR

PHONO: Depress this switch when playing a record on the turntable connected to the PHONO jacks.

AUX/VIDEO: Depress this switch when listening to an audio component connected to the AUX VIDEO jacks.

㉓ TUNING CONTROLS

These controls are used to tune in the broadcast stations. Depress the " ∧ " control to tune in a station with a higher frequency than that indicated on the display; depress the " ∨ " control to tune in a station with a lower frequency. Frequency stop " ■ " switch is used to suspend auto tuning operations using the STATION SEARCH and STATION SCAN functions.

NOTE:
For further details on the tuning, refer to the ⑭ AUTO/MANUAL SELECTOR.

㉔ STATION CALL SWITCHES

These are pressed to call out preset broadcasting stations or to preset the station.
To call out a station, first set the desired frequency band using the FM or AM switches and then press the desired switch.

㉕ SPEAKERS INDICATORS (A/B)

These light when SPEAKERS switch (A and/or B) has been depressed.

㉖ TONE CONTROL STEP DISPLAY (TONE)

This display indicates the level of the frequency response which has been increased or reduced using the TONE CONTROLS by the two symbols (and), " " and " " and numbers in 7 steps. " " indicates the bass range while indicates the treble range.

㉗ PRESET-TONE INDICATORS (A/B/C)

These indicators blink when the frequency response curves are memorized using the PRESET memory function, and they light when the curves are recalled using the PRESET-TONE switches to indicate that the curves have been memorized.

㉘ PRESET-VOLUME INDICATORS (A/B)

These indicators blink when the volume, loudness and muting level are memorized using the PRESET memory function, and light when the level is recalled using the PRESET-VOLUME switches to indicate that the level has been memorized.

㉙ LOUDNESS INDICATOR

This lights when the LOUDNESS switch is depressed. It also lights up to indicate that the loudness level has been memorized using the PRESET memory function.

㉚ MUTING INDICATOR

This lights when the MUTING switch is depressed. It also lights up to indicate that the muting level has been memorized using the PRESET memory function.

㉛ BALANCE INDICATOR

This lights as the BALANCE CONTROLS are operated. The arrows indicate whether the sound tends to be louder at the left or right speaker. When both the L and R arrows light, this indicates that the balance has been set to the center position.

㉜ VOLUME STEP DISPLAY

This display indicates the volume level in 32 steps from 00 to 31 in accordance with the adjustment of the VOLUME controls.

NOTE:
When the power is switched on, the volume step display blinks to indicate the volume level. After blinking, the volume step lights.

㉝ INPUT INDICATORS

These light when the ㉒ INPUT (PHONO or AUX/VIDEO) switch is pressed.

㉞ FM STEREO INDICATOR

This lights when receiving an FM stereo program.

㉟ TAPE INDICATOR (1, 2)

This indicates the tape deck which is playing back in accordance with the position selected by the TAPE 1, 2 switches.

㊱ SIGNAL INDICATOR

This indicator lights in sequence from 1 to 3 during the tuning of an AM or FM broadcast in accordance with the strength of the signals being received. The optimum tuning point is where the maximum number of indicators lights.

㊲ TAPE SWITCHES

TAPE 1: Depress this switch to use the tape deck connected to the TAPE 1 jacks (REC and PLAY).

TAPE 2: Depress this switch to use the second Tape deck connected to the TAPE 2 jacks (REC and PLAY).

NOTE:
Depress TAPE 1 and release TAPE 2 when dubbing a tape in the deck connected to the TAPE 1 jacks onto a tape in the deck connected to the TAPE 2 jacks.

㊳ MEMORY SWITCH

This switch is used to preset stations into the STATION CALL switches. It is also used when presetting the frequency response curves into the PRESET-TONE switches and the volume patterns into the PRESET-VOLUME switches.

㊴ ADAPTOR SWITCH

Depress this switch when reproducing sound from an adaptor component which is connected to the ADAPTOR jacks. Always release this switch if you are not using a component with these terminals.

㊵ TAPE COPY SWITCH (1 ←► 2)

This is used when dubbing or editing tapes using two tape decks connected to the TAPE 1 and TAPE 2 on the rear panel terminals. Depress when dubbing from the tape deck connected to the TAPE 1 (or TAPE 2) terminals to the tape deck connected to the TAPE 2 (or TAPE 1) terminals.

NOTE:
- *Make absolutely sure that the TAPE COPY switch is released if you do not intend to make use of the dubbing function. Otherwise you may not be able to record ordinary program source.*

㊶ SUBSONIC 15Hz SWITCH

The subsonic filter with the 15Hz cut-off frequency is actuated when this switch is depressed. This filter serves to attenuate the frequencies lower than 15Hz with a 6dB/oct. slope and, therefore, it can be used to suppress the ultra-low-range noise which is generated by record warp and other factors. This noise cannot actually be heard by the ear but it can cause cross modulation distortion and even speaker damage. Use this switch when required during record play.

㊷ PHONO MM/MC SELECTOR

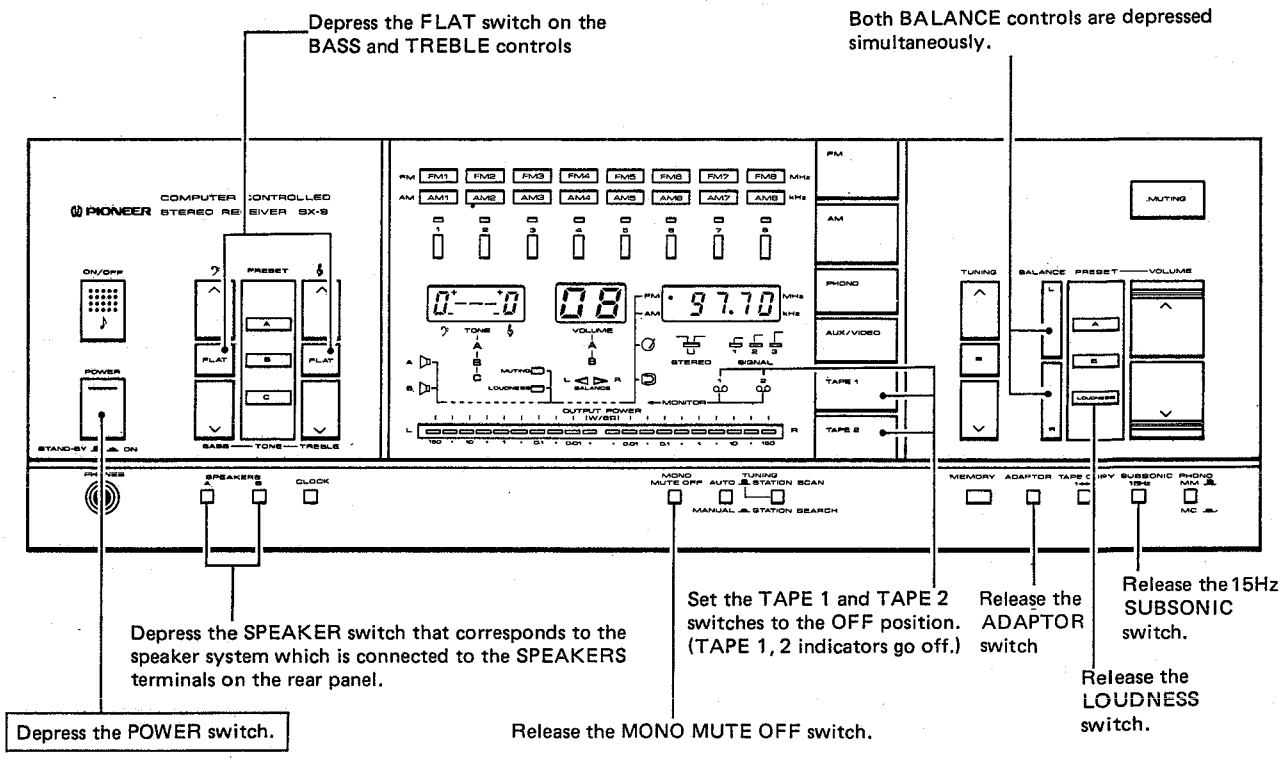
This selector can be set to the position corresponding to the type of cartridge which you are using for record play.

MM : For moving magnet cartridges
MC : For moving coil cartridges

LISTENING TO THE BROADCASTING

PRIOR TO SWITCHING POWER ON

Before switching the power on, set the various controls as follows.


Depress the FLAT switch on the BASS and TREBLE controls
Both BALANCE controls are depressed simultaneously.
Depress the SPEAKER switch that corresponds to the speaker system which is connected to the SPEAKERS terminals on the rear panel.
Depress the POWER switch.
Release the MONO MUTE OFF switch.
Set the TAPE 1 and TAPE 2 switches to the OFF position. (TAPE 1, 2 indicators go off.)
Release the ADAPTOR switch
Release the 15Hz SUBSONIC switch.
Release the LOUDNESS switch.

There are three ways to tune in a station: use the auto tuning mode employing the STATION SEARCH and STATION SCAN functions, use the manual tuning mode or use the preset tuning mode employing the STATION CALL switches.

AUTO TUNING

Using station search function

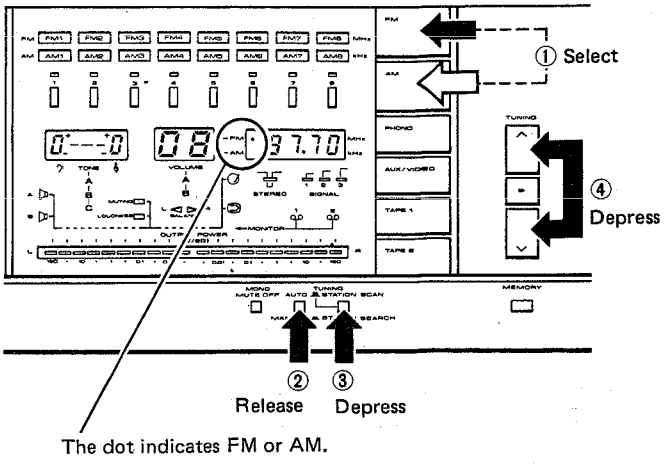
1 Depress the FM or AM switch in line with the frequency band having the desired station.
(The dot on the FREQUENCY/CLOCK display indicates FM or AM.)

2 Release the AUTO/MANUAL selector to the AUTO position.

3 Depress the STATION SCAN/STATION SEARCH selector to the STATION SEARCH position.

4 Depress the TUNING controls (∧ or ∨ part).
The frequency on the display changes rapidly and the stations are searched.
The frequency display stops once a station is picked up.

5 If the station picked up is not the one desired, depress the TUNING controls again. Repeat this operation until the desired station is picked up.

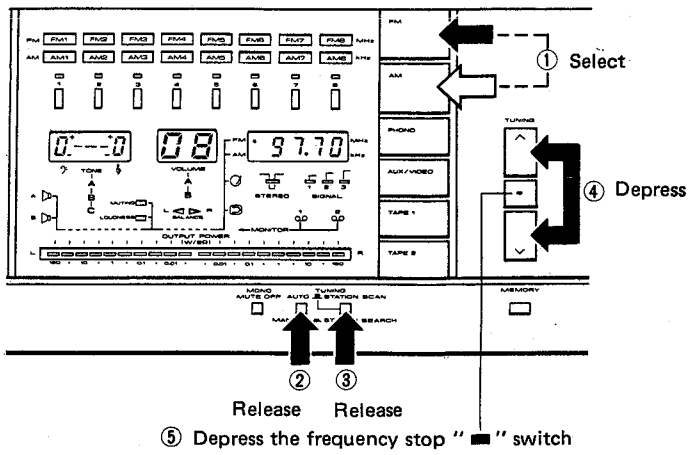


NOTES:

- *The frequency may not stop if the signals from the desired station are too weak. If this happens, replace the antenna with one having a high gain or tune in the station manually.*
- *The frequency will not stop during AM reception if the position of the AM CHANNEL STEP switch is not correct.*
- *When the frequency scanning reaches the upper or lower limit of the frequency band, it will start to move in the direction of the opposite limit.*

Using station scan function

1 Depress the FM or AM switch in line with the frequency band having the desired station.
(The dot on the FREQUENCY/CLOCK display indicates FM or AM.)
2 Release the AUTO/MANUAL selector to the AUTO position.
3 Release the STATION SCAN/STATION SEARCH selector to the STATION SCAN position.
4 Depress the TUNING controls (∧ or ∨ part).
The frequency display changes in the direction indicated by the part of the TUNING controls and stations start to be searched. Once a station has been picked up, the scanning operation stops for about 5 seconds. (The STATION indicators blink dimly in succession.)
Sound can be heard through the speakers so that the station program can be checked.
After the 5 seconds, the station scanning operation resumes.
5 Once the desired station has been picked up, depress Frequency stop " ■ " switch and stop the scanning operation.



NOTES:

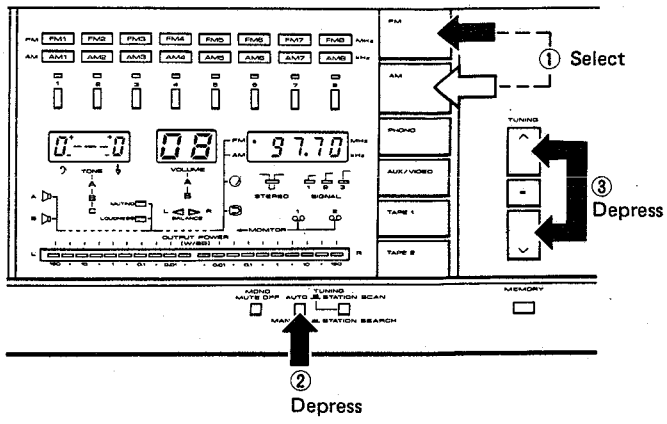
- *When the STATION CALL switch is depressed during frequency scanning, the station scan function becomes inoperative. Depress the TUNING controls to start station scanning again.*
- *The tuning operation stops in the reception mode when the VOLUME controls are depressed.*

MANUAL TUNING

1 Depress the FM or AM switch in line with the frequency band having the desired station.
(The dot on the FREQUENCY/CLOCK display indicates FM or AM.)
2 Depress the AUTO/MANUAL selector to MANUAL.
3 Depress the TUNING controls (∧ or ∨ part).
When the control is kept in the depressed position, the frequency changes continuously. Once the control is released, the frequency scanning stops and so the frequency of the desired station can be aligned properly.

NOTES:

- *Each time the TUNING controls are depressed, the frequency changes in 50kHz steps during FM reception and in 9kHz or 10kHz steps during AM reception in accordance with the position of the AM CHANNEL STEP switch.*
- *The frequency scanning stops in the manual tuning mode at the upper or lower limit.*



LAST STATION RECALL FUNCTION

When the PHONO or AUX/VIDEO function switch is depressed while an FM or AM broadcast is being received and the FM or AM switch is then depressed again, the station which was received before is recalled. The last station is also recalled when the power is switched off and then switched on again.

HOW TO PRESET THE STATION

PRESET TUNING

Each of the 1 through 8 STATION CALL switches can accommodate one FM station and one AM station, making a total of 16 stations which can be preset. After presetting, the desired station can be recalled simply by depressing the corresponding STATION CALL switch.

Procedure for presetting

1. Tune in the desired station using the STATION SEARCH or MANUAL TUNING method.
2. Depress the MEMORY switch.
   For about 5 seconds, the STATION indicators blinks in succession to indicate that presetting is now possible. Blinking dimly indicates that the broadcast station has not been memorized; when the station memorizing operation has been completed, the indicator blinks brightly.
3. Depress the STATION CALL switch while the indicators are blinking. The station indicator above the depressed switch lights (changes from blinking to lighted condition) to indicate that presetting is completed. Up to 8 FM and 8 AM stations can be preset by repeating the above operation.

NOTES:

- *Presetting is not possible even when the STATION CALL switch is depressed after the STATION indicator that shows it is possible to preset stations, has gone off.*
- *When the indicators have gone off before you have depressed the switch, depress the MEMORY switch again.*

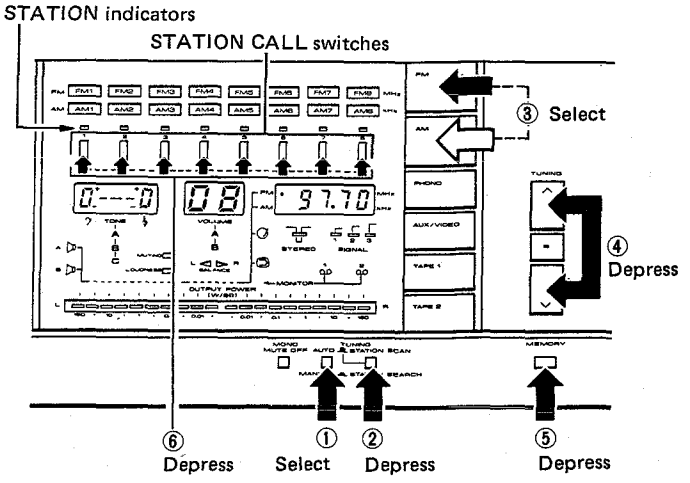
Presetting with STATION SCAN function

The station scan function tunes in the stations in order. Presetting using this function can be performed speedily since presetting is possible during broadcast reception.

1. Release the AUTO/MANUAL selector to the AUTO position.
2. Release the STATION SCAN/STATION SEARCH selector to the STATION SCAN position.
3. Depress the TUNING controls (∧ or ∨ part).
   Frequency scanning starts and once a station has been picked up, the STATION indicators blinks in succession for about 5 seconds (= presetting is now possible). Then scanning resumes.
4. If the station which has been picked up is the desired station, depress the STATION CALL switch to preset the station. There is no need to depress the MEMORY switch.
   The next station is scanned once the STATION CALL switch is depressed.

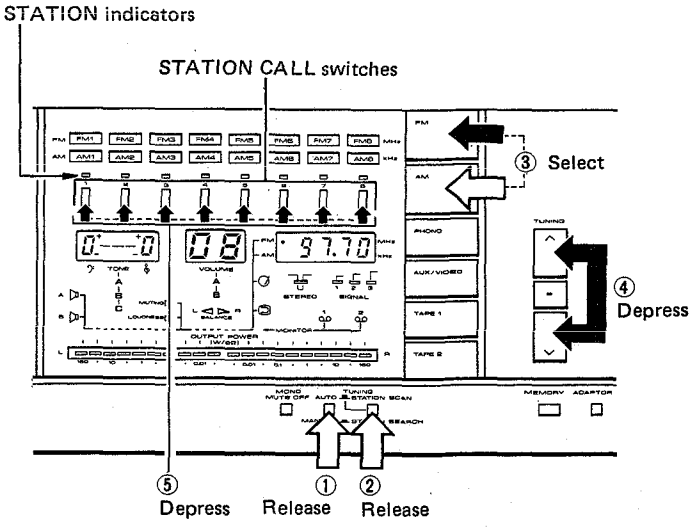
Releasing the STATION SCAN function

Depress the Frequency stop " ▬ " switch.



Erasing the station memory

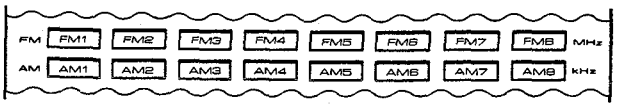
When the frequency stop " ■ " switch is depressed while the MEMORY switch is kept in the depressed position, the contents of the station memory only are cleared.



NOTE:
When a STATION CALL switch is depressed during frequency scanning, the STATION SCAN function is released and the station which was preset beforehand is now received.

REPLACING THE STATION NAME DISPLAY TABS

As in the figure, display tabs are inserted into the station display windows when the unit is shipped from the manufacturing plant. After stations have been preset, replace these tabs if necessary with the accessory display tabs.

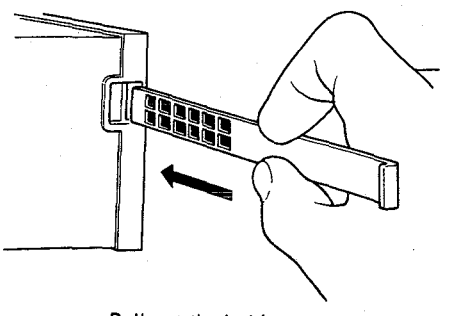


Procedure

1. Pull out the holder.
   Pull out the plate from the opening in the left side of the front panel.
2. Replace the display tab

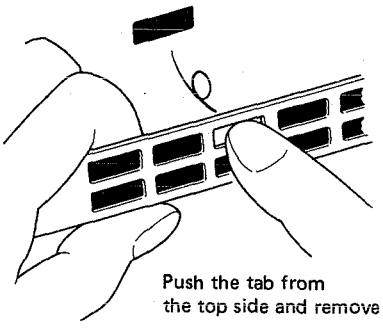
- Push the already housed display tab from the top side and remove.
- Cut out the required frequency tab from the accessory display card.
- Insert the display tab as shown in the figure.

1



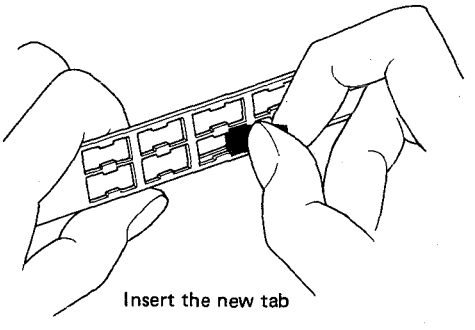
Pull out the holder

2



Push the tab from the top side and remove

3



Insert the new tab

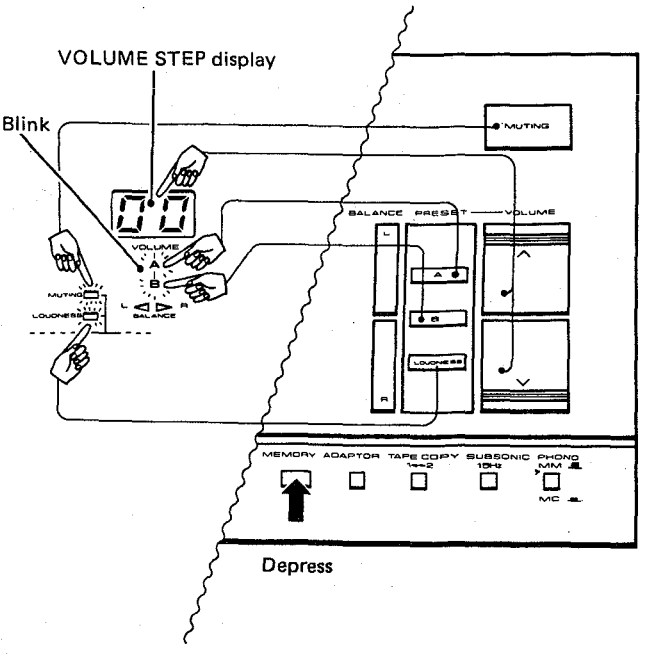
HOW TO PRESET THE VOLUME LEVEL

The volume of this unit is controlled by the " ∧ " and " ∨ " VOLUME controls and the volume level is indicated in steps (00~31) on the center VOLUME STEP display. The volume level can be preset in two patterns (A and B) with the MEMORY switch and PRESET-VOLUME switch. Just by depressing the PRESET-VOLUME switch (A or B), the memorized volume level can be recalled immediately. The muting and loudness levels can also be preset.

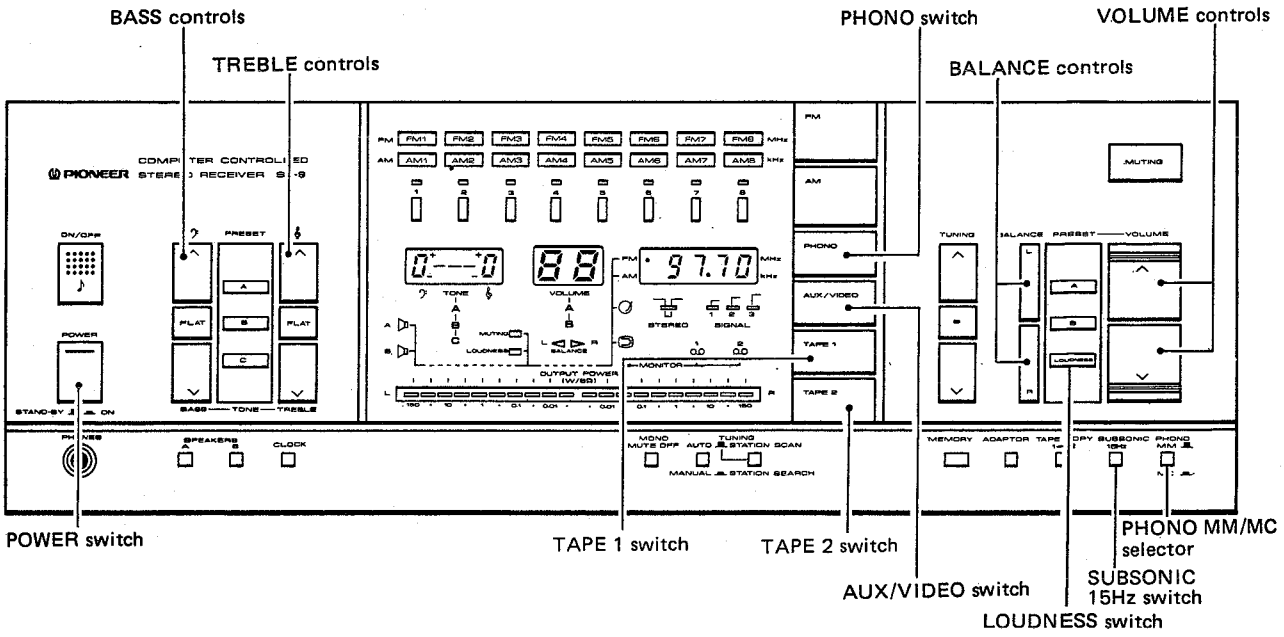
Procedure for presetting

1. Set the desired volume level using the VOLUME controls. Check the volume through the speakers. It is indicated on the VOLUME STEP display.
   The volume level in combination with the MUTING and LOUDNESS switches can also be preset with the VOLUME presetting operation by depressing the MUTING and LOUDNESS switches.
2. Depress the MEMORY switch. The PRESET-VOLUME indicators (A and B) blink for about 5 seconds.
3. Depress the PRESET-VOLUME switch A or B while the PRESET-VOLUME indicators (A and B) are blinking.

The volume level is preset once the PRESET-VOLUME indicator A or B changes from blinking to lighting.



OTHER PROGRAM SOURCE



PLAYING RECORDS

1. Depress the POWER switch.
2. Depress the PHONO switch.
3. Select the PHONO MM/MC selector according to the cartridge to be used.
4. Operate the turntable to play the record.
5. Adjust the volume with the VOLUME controls.

NOTE:
Depress the SUBSONIC 15Hz switch if there is a great deal of noise or if the speaker cone paper is seen to be moving despite the fact that you cannot hear the sound during a performance.

PLAYING A STEREO COMPONENT CONNECTED TO THE AUX/VIDEO JACKS

1. Depress the POWER switch.
2. Depress the AUX/VIDEO switch.
3. Operate the component which you have connected to the AUX/VIDEO jacks.
4. Adjust the volume with the VOLUME controls.

ADJUSTMENT OF SOUND QUALITY

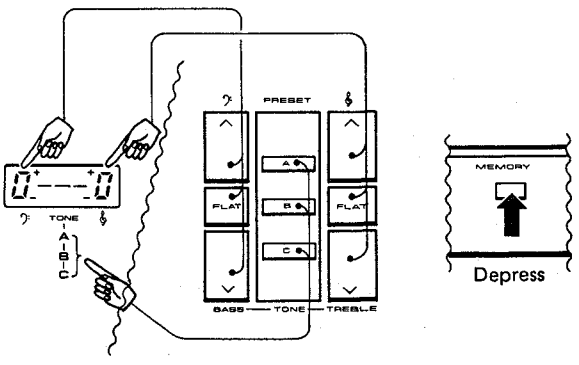
After adjusting the volume level, you can adjust the BASS controls, TREBLE controls and LOUDNESS switch to the preferred positions.

HOW TO PRESET THE TONE CONTROLS

The unit's sound quality can be adjusted using the TONE controls (BASS, TREBLE) " ∧ " and " ∨ " and the tone level is indicated on the TONE CONTROL STEP display. Three preferred tone patterns (bass and treble levels) (A, B and C) can be preset. Just by pressing the PRESET-TONE switch (A,B or C), the tone pattern can be recalled immediately from the memory.

Procedure for presetting

1. Use the tone controls (BASS, TREBLE) to set the preferred tone level. Check the tone through the speakers. The tone level is indicated on the TONE CONTROL STEP display.
2. Depress the MEMORY switch. The PRESET-TONE indicators (A, B and C) blink for about 5 seconds.
3. Depress PRESET-TONE switch A, B or C while the PRESET-TONE indicators (A, B and C) are blinking. The tone pattern is preset once the PRESET-TONE indicator A, B or C changes from blinking to lighting.



TAPE DECK OPERATIONS

PLAYBACK (Fig. 8)

1. Depress the TAPE 1 switch if the tape deck connected to the TAPE 1 jacks. Depress the TAPE 2 switch if it is connected to the TAPE 2 jacks.
2. Release the ADAPTOR switch.
3. Operate the tape deck controls for playback.
4. Adjust the volume with the VOLUME controls.
5. Adjust the tone with the BASS and TREBLE controls.

NOTE:

- *Always release the TAPE 1 and 2 switches, when you are not playing back a tape.*
- *If you depress the ADAPTOR switch together, you will hear the playback sound of the tape deck through the adaptor connected to the ADAPTOR jacks.*

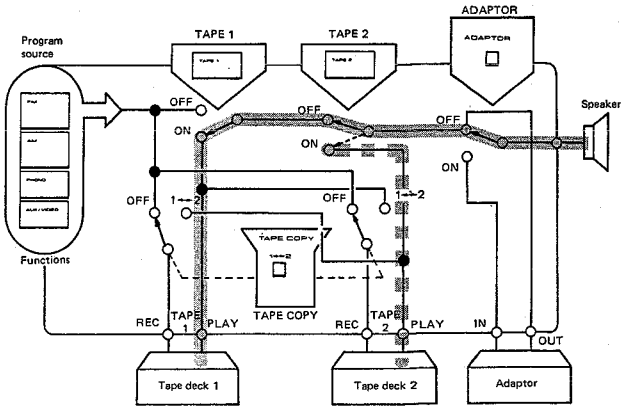


Fig. 8

RECORDING (Fig. 9)

1. Select the AM, FM switch or INPUT selector that corresponds to the program source which you intend to record.
2. Release the TAPE COPY and ADAPTOR switches.
3. Play the program source (record, FM broadcast, etc.)
4. Set the recording level on the tape deck.
5. Start the recording by following the tape deck's recording procedure.

NOTE:

The receiver's VOLUME, BASS and TREBLE controls have no affect on the recorded sound when a recording is being made.

Tape monitoring

If a recording is being made on a 3-head tape deck, the recorded sound can be monitored through the speaker systems if the TAPE 1 or 2 switch is depressed, depending on which TAPE jacks the tape deck is connected to. In this case, both recording and playback connections must be made.

NOTE:

If you have a 2-head open-reel deck or cassette deck, you will not be able to monitor the recorded sound even if you depress the TAPE 1 or 2 switch. However, you will be able to hear the sound at the playback end (program source).

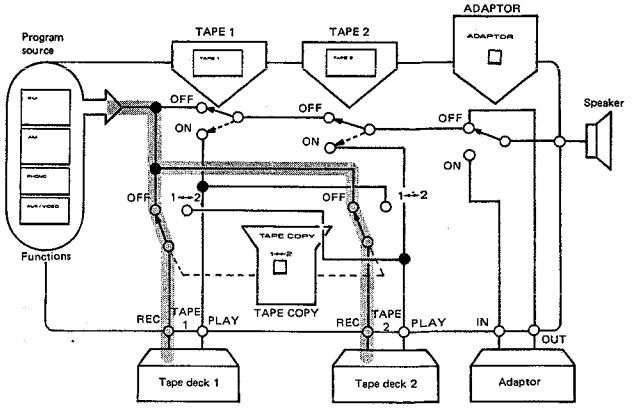


Fig. 9

Duplicating and editing recorded tapes (Fig. 10)

1. As shown in Fig. 10 connect the tape decks to the receiver's TAPE 1 and TAPE 2 jacks.
2. If you are duplicating from TAPE 1 (playback mode) to TAPE 2 (recording mode) or from TAPE 2 (playback mode) to TAPE 1 (recording mode), depress the Tape COPY switch.
3. Depress the TAPE 1 or 2 switch, depending on which tape deck the recording is being made when you want to monitor the recording sound.

NOTES:

- *Set the ADAPTOR switch to the released (OFF) position when you listen to records or a broadcasting.*
- *Do not set both tape decks to the recording mode at the same time.*

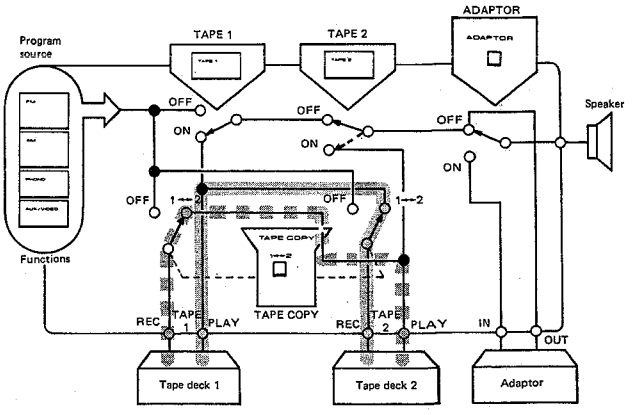


Fig. 10

USING THE PREAMP OUT AND POWER AMP IN JACKS

If the connector bars between the PREAMP OUT and POWER AMP IN jacks are removed (see Fig. 11), it is possible to use the preamplifier section and the power amplifier section independently. However, for normal use always keep these connector bars in place because once you remove them, no sound will be heard through the speakers. Always set the power switch to STAND-BY when removing or replacing these connector bars.

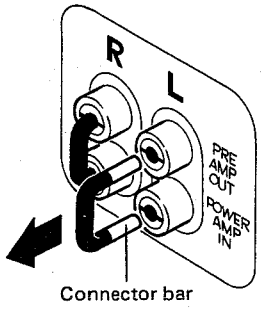


Fig.11

INDEPENDENT PREAMPLIFIER SECTION

As shown in Fig. 12 you can connect a high output power stereo power amplifier or a homebuilt power amplifier to the PREAMP OUT jacks and compare the sound with the power amplifier section of the stereo receiver.

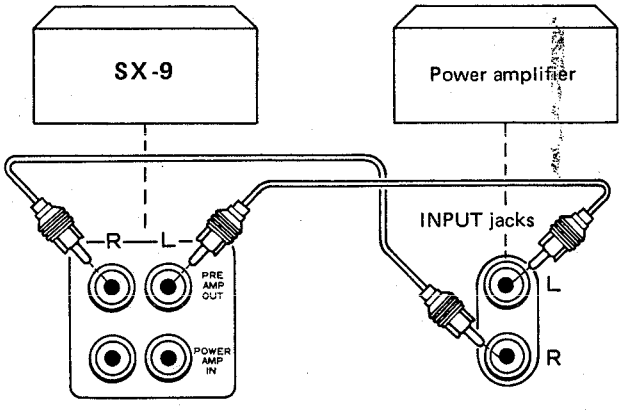


Fig.12

NOTE:
When using this unit's PRE-OUT terminals for connection to other power amplifiers with a multi-amplifier system configuration, the following points should be borne in mind for connection.
Noise may be heard through the speakers when the unit's power switch is set to ON or OFF with the power switches of the other power amplifiers at the ON position.
In this case, connect the power plugs of the other power amplifiers to the SWITCHED AC outlets on this unit or, if this is not possible, set this unit's power switch to ON first and then set the power switches of the other power amplifiers to ON. When switching the power off, the power switches of the other power amplifiers should be set to the OFF position first.

INDEPENDENT POWER AMPLIFIER SECTION

As shown in Fig. 13 you can connect a stereo preamplifier which you may have to the POWER AMP IN jacks and compose your own stereo system.

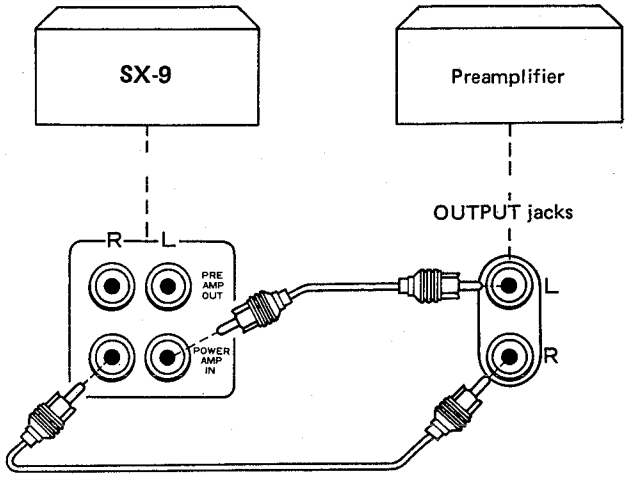


Fig. 13

COMPOSING A MULTI-AMPLIFIER SYSTEM

As shown in Fig. 14, you can compose your own multi-amplifier system if you connect an optional stereo power amplifier and crossover network. A multi-amplifier system splits up the audible frequency range into different frequency bands. Each of these bands is then amplified by the amplifiers and so this has the advantage of reducing intermodulation distortion.

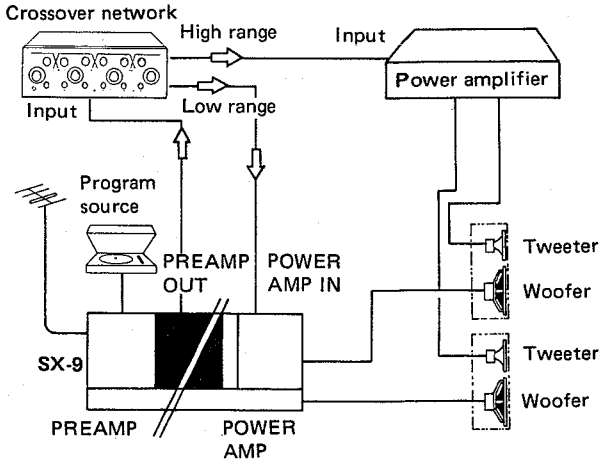


Fig. 14

TROUBLESHOOTING

If you think the unit is malfunctioning, perform a check following the instructions listed below prior to contacting a service facility. The problem may be in a maintenance procedure, or attempting an erroneous operation, or a defective or unsuitable tape rather than a problem with the unit itself. If the problem persists after performing the check below, contact the store where you bought the unit or Pioneer Service Center/Service Station.

	Symptom	Diagnosis checkpoints	Remedy
When listening to broadcasts	Cannot receive FM stations.	• Power switch is at off. • Signal indicators do not light up properly. • In the case of a far away broadcasting station or weak signals, all signals below the internal muting level are cut out.	• Depress to ON. • In order to increase the antenna input of the radio signals, erect an FM outdoor antenna if you have been listening with the indoor T-type antenna. • Depress the MONO MUTE OFF switch.
	Cannot receive AM stations.	• Signal indicators do not work properly indicating that signal strength at AM antenna is insufficient.	• Adjust the bar antenna. • Install an outdoor antenna.
	No sound is heard through the speakers.	• The TAPE 1 or 2 switch is depressed.	• Release the switch to the OFF position. (TAPE indicator goes off)
	No auto stop (figures on frequency display do not stop).	• Input signals are not strong enough. • The AM CHANNEL STEP switch on the rear panel is set to the wrong position with AM reception.	• If the T-type antenna is being used, change over to an FM outdoor antenna. • Change the direction of antenna. • Set it to the correct position. (Refer to page 3)
	No FM stereo with stereo reception.	• MONO MUTE OFF switch is depressed.	• Release the switch.
	Preset function does not work.	• After the STATION indicator goes off, STATION CALL switch is depressed.	• Depress the STATION CALL switch immediately after depressing the MEMORY switch again.
	Cannot scan frequencies even when the tuning switch is depressed.	• AUTO/MANUAL selector is set to MANUAL. In this case, the frequencies can be scanned if the TUNING controls are continuously depressed.	• Release the selector to AUTO.
When playing records	Hum or buzz.	• Poor connection shielded wire. (a) • Jack connection is loose. (b) • Power lead of fluorescent lamp passes near the shielded wire. (c) • Poor grounding. (d) • Ham transmitting station or TV transmitting station is near your house. (e)	Correct the conditions stated in (a), (b), (c), or (d). In case of (e), report it to an official authority.
	Output tone quality is poor and mixed with noise. Treble is not clear.	• Stylus is worn. (a) • Record is worn. (b) • Dust adhering to stylus. (c) • Stylus is improperly mounted. (d) • Stylus pressure (tracking force) is not correct. (e) • The treble level is too high.	Check (a) through (e) and correct the condition. • Set the TREBLE TONE controls (𝄞) to 0.
	When increasing the volume caused howl.	• Distance between the turntable and the speakers is too short. • The turntable or speakers supports are unstable.	• Increase the distance or rearrange the installation of the unit and speakers. (Installing the turntable on a firm, solid stand may alleviate this problem.) • Do not turn up the bass excessively.

When the power cord has been disconnected from the AC outlet for more than a week, the presettings (for the broadcasting stations and volume level) may be erased.
If this happens, perform the presetting operations again.

SPECIFICATIONS

Power Amplifier Section

Continuous Average Power Output is 125 watts per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.005% total harmonic distortion.

Total Harmonic Distortion (20 Hertz to 20,000 Hertz, 8 ohms)
- continuous rated power output: No more than 0.005%
- 62.5 watts per channel power output ..... No more than 0.005%

Intermodulation Distortion (50 Hertz : 7,000 Hertz = 4:1)
- continuous rated power output: No more than 0.005%
- 62.5 watts per channel power output ..... No more chan 0.005%

Frequency Response . . . 5 Hertz to 450,000 Hertz $^{+0}_{-3}$ dB

Input Sensitivity/Impedance (POWER AMP IN) ..... 1V/50 kilohms

Output: Speaker ..... A,B, A series B

Damping Factor (20 Hertz to 20,000 Hertz, 8 ohms): 50

Hum and Noise (IHF, short-circuited, A network): 115dB

Preamplifier Section

Input (Sensitivity/Impedance)
- PHONO MM ..... 2.5 mV/50 kilohms
- PHONO MC ..... 0.25 mV/100 kilohms
- AUX/VIDEO, TAPE PLAY 1,2, ADAPTOR IN ..... 150mV/50 kilohms

Phono Overload Level (T.H.D. 0.009%, 1,000 Hertz)
- PHONO MM 150mV

Output (Level/Impedance)
- TAPE REC 1, 2, ADAPTOR OUT . . 150 mV/2.2 kilohms
- PREAMP OUT (R_L : 50 kilohms) ..... rated 1V/1 kilohms

Frequency Response
- PHONO (RIAA Equalization) ..... 20Hz to 20,000 Hertz±0.3 dB
- AUX, TAPE PLAY 1,2, ADAPTOR IN ..... 5Hz to 100,000 Hertz $^{+0}_{-3}$ dB

Tone Control
- BASS ..... ± 10dB (100Hz)
- TREBLE ..... ±10dB (10kHz)

Subsonic Filter 15Hz (6dB/oct.)

Loudness Contour (Volume control set at –40dB position) ..... +6dB (100Hz), +3dB (10,000Hz)

Hum and Noise (IHF, short-circuited, A network)
- PHONO MM/MC 80dB/67dB
- Muting ..... –25dB

FM Tuner Section

Usable Sensitivity (IHF) Mono; 10.3dBf (0.9μV, 75 ohms)
50 dB Quieting Sensitivity ..... Mono; 15.7dBf (1.6μV, 75 ohms)
Stereo; 37dBf (19.5μV, 75 ohms)

Signal-to-Noise Ratio ..... Mono; 80dB (at 85 dBf)
Stereo; 76dB (at 85 dBf)

Distortion (at 65 dBf)

MONO	100Hz	0.1%
	1kHz	0.07%
	6kHz	0.15%
STEREO	100Hz	0.15%
	1kHz	0.1%
	6kHz	0.2%

Capture Ratio 1.0dB

Alternate Channel Selectivity 400kHz; 80dB

Stereo Separation ..... 1kHz; 45 dB
30Hz to 15kHz; 35dB

Frequncy Response ..... 20Hz to 15kHz±0.5dB

Spurious Response Ratio 90dB

Image Response Ratio 80dB

IF Response Ratio 90dB

AM Suppression Ratio 55dB

Subcarrier Product Ratio 55dB

SCA Rejection Ratio 60dB

Muting Threshold ..... 29.3dBf (8μV, 75 ohms)

Antenna Input . . 300 ohms balanced, 75 ohms unbalanced

AM Tuner Section

Sensitivity (IHF, Ferrite antenna) 300μV/m
(IHF, Ext. antenna) 15μV

Selectivity 27dB

Signal-to-Noise Ratio 50dB

Image Response Ratio 40dB

IF Response Ratio 80dB

Antenna ..... Ferrite loopstick antenna

Miscellaneous

Power Requirements ..... AC 110/120/220/240V (switchable), 50/60Hz

Power Consumption 300W

Dimensions ..... 420(W) x 151(H) x 448(D) mm
16-9/16(W) x 5-15/16(H) x 17-5/8(D) in

Weight (without package) ..... 15.1 kg (33 lb 5 oz)

Furnished Parts

FM T-type Antenna	1
Station Card	5
Fuse	2 (5A and 10A)
Operating Instructions	1

NOTE:
Specifications and the design subject to possible modifications without notice due to improvements.

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